

# CHAPTER 6

## Conclusion, Discussion, and Further Studies

### 6.1 Conclusion

The purpose for this thesis is to implement an information system in the current project management process of the case company which facing the problem of lacking clear schedule and resource allocation plan. Therefore, this thesis generates a template schedule for the company to use in future projects. The implementation of an information system such as using project management software has several benefits. It produces reports quickly and easily. It simplifies scheduling process for large project. It enables the company to control projects effectively.

The system is divided into three major sections, namely project planning, scheduling, and control. In project planning, the planning process is proposed. Major elements in project planning are also identified so that the company can use as a checklist on what they need during the planning process.

Project scheduling is probably the focus of the research because it is where the company is having major problems. The steps in scheduling start from creating a Work Breakdown Structure (WBS) then enter the information into project management software, in this case, Microsoft Project. The information entered includes task names, durations, predecessors, and resource names. Once all information has been entered, we now have a preliminary schedule which can be shown either as Gantt charts or network diagrams. The thesis goes on to cover scheduling techniques such as Program Evaluation and Review Technique (PERT), and critical path method (CPM).

Various resource allocation techniques have been discussed. With the aid of Microsoft Project, techniques such as resource loading and resource leveling can be performed easily.

The last section is project control. Project control involves tracking and managing project as it progresses. Better control of the project could translate into shorter time and lower costs to complete project.

The information from previous project is used in the process to create a template. At the end, the company now has a project management template for mechanical and electrical installation project for future projects.

Overall benefits received from the implementation of the project management process and information system are:

- 1) The planning stage is more efficient, less time-consumed, and more completed for the company. All tasks and resources for the project are defined in advance, therefore it should not a sudden change during the project. But should change happen, the company will have contingency plan to handle the change and its effect.
- 2) The company is better prepared if changes occur to scope, schedule, or resources during the project because they have planned the solution to resolve the problems in advance.
- 3) PERT analysis helps project manager in planning and looking at the overall picture of the project for shortest, longest, most likely time for project completion.
- 4) Problems with resources now have been solved using various tools such as task splitting, resource management plan, and resource leveling techniques. The company will be able to assign and use resources more efficiently for future projects.
- 5) The ability to control and manage project has been improved by the use of project baseline to compare with actual progress, something that the company has never done before. In the future, the company should be able to track the progress and see whether they are in front or behind schedule in both time and cost sides.

## **6.2 Discussion**

This thesis has been conducted on a project that was already completed in the year 2003. Recorded information was obtained from engineers, construction manger, and commercial manager. However, some information was not recorded and it has to be guessed or estimated by engineers, construction manager, project manager, and project

director. This could result in variations in schedule so that the template created might not be as accurate as it should.

Another important point is that the schedule has been created under the assumption of no outside factors affecting the schedule. In real life, it has been known that situations tend to occur unexpectedly and sometimes can get out of hand. Examples of these situations are scope changed by the contractor, delivery delay by dealers, access area was granted late, etc. These were just example of some situations that had happened and affected the schedule of the company. The company has no power to control or prevent these situations from happening, therefore what they could do is to cope with these problems and try to accept and adjust accordingly.

During scheduling and assigning resource, we assume that the teams are responsible for the whole tasks that they are assigned to as a unit. Therefore in resource sheet maximum unit, we have each team as 100% instead of having the total number of people working on the team, which can be between 8-10 people in that case the maximum unit should be between 800-1000%.

This kind of project has never been done before, therefore some important points or information might be left out. These points and information could play a major role in reality and therefore must be closely monitored.

When implementing the project for the first time, the company might face some problems or difficulties. These problems should be documented and improve the system for future projects as suggested in further studies.

### **6.3 Further Studies**

Some further studies in relation to the research topic maybe carried out. First, further studies to optimize project implementation. The system has been developed basing on the information of a completed project. Therefore when implemented in future projects. Some changes and adjustments may need to be made. These changes and adjustments should be reviewed and documented to improve the system.

Second, another topic in relation to this research is project costing. One of the available methods in dealing with the cost of a project is Activity Based Costing (ABC).

By applying ABC, the company will be able to evaluate and analyze the cost of the project management of the project. ABC will identify the cost of each activity which gives us the opportunity to reduce the cost of project and improve the process.